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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/994,359	11/26/2001	Herfried Karl Wiczorek	DE000208	9841

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PHILIPS INTELLECTUAL PROPERTY & STANDARDS  
P.O. BOX 3001  
BRIARCLIFF MANOR, NY 10510

EXAMINER

HANNAHER, CONSTANTINE

ART UNIT PAPER NUMBER

2878

DATE MAILED: 12/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/994,359	WIECZOREK, HERFRIED KARL	
	<b>Examiner</b>	<b>Art Unit</b>	
	Constantine Hannaher	2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 November 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 November 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All   b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                   | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                          | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>0111</u> | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION****Drawings**

1. The drawings are objected to under 37 CFR 1.84(h)(5) because the sole Fig. show(s) modified forms of construction in the same view. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

**Specification**

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Note the use of "The invention relates to..." which can be implied.

3. The disclosure is objected to because of the following informalities: on page 4 at line 15 the degree symbol is used where the percent symbol would be more appropriate.

Appropriate correction is required.

**Claim Objections**

4. Claims 3 and 11 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The claims refer to an x-ray detector module "notably as claimed in

claim 1” but there cannot be any equivocation: any dependent claim must include every limitation of the claim upon which it depends.

### **Claim Rejections - 35 USC § 112**

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claim 12 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The specification does not describe a method of manufacture in which deposition of the free-flowing mixture into the cells occurs “after” densification of the mixture as recited in claim 12.

### **Claim Rejections - 35 USC § 103**

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1, 4-10, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Redmayne (GB002167279A) in view of Cusano *et al.* (US004375423A).

With respect to independent claim 1, Redmayne discloses an x-ray detector module **1** (Fig. 1) which includes a carrier **2** that forms cells **3** arranged in the form of a grid and is made of a material that is essentially non-transparent to x-rays (page 1, line 41) and scintillators **4**. The scintillators **4**

provided in the cells **3** in the x-ray detector module of Redmayne emit light in the range of a longer wavelength in response to the absorption of x-rays. Although the scintillators **4** are not described as a mass of scintillator particles embedded in a binder, such scintillation material is well-known, as shown by Cusano *et al.* The scintillation material described by Cusano *et al.* (column 4, lines 14-15) is applicable to industrial uses (column 8, lines 33-37) as described by Redmayne (page 1, lines 6-8), so in view of the increased optical output identified by Cusano *et al.*, it would have been obvious to one of ordinary skill in the art at the time the invention was made to specify that the scintillators **4** in the x-ray detector module of Redmayne were a mass of scintillator particles **13** embedded in a binder **15** as shown by Cusano *et al.* (Fig. 2). The approximate equality of the refractive index of the scintillator particles **13** and the refractive index of the binder **15** described by Cusano *et al.* (column 3, lines 4-8, see also Fig. 3) for the emitted wavelength is a value of difference within the claimed range.

With respect to dependent claim 4, the carrier **2** in the x-ray detector module of Redmayne consists of a metal (page 1, line 41).

With respect to dependent claim 5, the surface of the carrier **2** in the x-ray detector module of Redmayne is provided at least partly with a reflector layer (page 1, lines 55-56). A “highly reflective” material is considered to disclose a value within the claimed range.

With respect to dependent claim 6, Cusano *et al.* teaches a value for the volume of the scintillator particles (column 6, line 18) which touches or overlaps the claimed range.

With respect to dependent claim 7, Redmayne teaches values for the height of the scintillator **4** which are within the claimed range (page 2, line 7-9).

With respect to dependent claim 8, Redmayne teaches an x-ray detector module characterized in that the width (element diameter) as measured in the plane of the array of the cells **3** is smaller than the height (depth) of the cells **3** (page 2, lines 3-9).

With respect to dependent claim 9, the scintillator materials recited are either suggested by Redmayne and Cusano *et al.* or are so well-known as to require no citation.

With respect to dependent claim 10, the x-ray detector module **1** of Redmayne provides a detector for converting photons from the range of the longer wavelength into an electrical signal at least to one side of at least one cell (page 2, lines 17-22).

With respect to dependent claim 12 (as best understood), Cusano *et al.* suggests a method of manufacturing an x-ray detector module (column 3, line 10-14) where a free-flowing mixture of a binder and scintillator particles is densified by one of the recited techniques. Deposition of the mixture into the cells **3** of the carrier **2** of the x-ray detector module of Redmayne would have been obvious to one of ordinary skill in the art at the time the invention was made in view of the desire to achieve the illustrated circular cross-section for cells **3**.

9. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Redmayne in view of Cusano *et al.* as applied to claim 1 above, and further in view of Hoffman *et al.* (US004563584A).

With respect to dependent claim 2, Cusano *et al.* suggests a variety of materials for the binder (column 5, lines 44-49) but not dioxide of titanium. Hoffman *et al.* confirms that  $\text{TiO}_2$  is effective in improving light piping (column 3, lines 61-68) so it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the binder suggested by Cusano *et al.* contain titanium dioxide (the sole requirement of this claim in view of the word “notably”).

10. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Redmayne in view of Cusano *et al.* as applied to claim 1 above, and further in view of Chhabra *et al.* (US006534772B1).

With respect to dependent claim 3, Cusano *et al.* does not identify the grain size of the scintillator phosphor powder particle size, but Chhabra *et al.* teaches that values in the recited range (column 5, line 22) are known for phosphor particles **64** (Fig. 3) in a carrier **50** with cells **60** (Fig. 2).

In view of the optimization achieved by Chhabra *et al.*, it would have been obvious to one of ordinary skill in the art at the time the invention was made to specify that the grain size for the scintillator particles suggested by Cusano *et al.* was in the recited range.

11. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Redmayne in view of Cusano *et al.* as applied to claim 1 above, and further in view of Boone *et al.* (US005712483A).

With respect to dependent claim 11, the cells **3** in the x-ray detector module **1** of Redmayne have a tubular shape (Fig. **1**) but the degree to which they are filled is not specified. Boone *et al.* shows carrier **10, 22** for an x-ray detector module (Fig. **3**) in which only a sub-volume of the cells contains a scintillator material. In view of the scattered x-ray rejection afforded by the arrangement taught by Boone *et al.*, it would have been obvious to one of ordinary skill in the art at the time the invention was made to fill only a sub-volume of the cells **3** of the x-ray detector module **1** of Redmayne with the scintillator material of Cusano *et al.*

#### **Response to Submission(s)**

12. The amendment filed November 26, 2001 has been entered.

13. This application has been published as US2002/0079455A1 on June 27, 2002.

#### **Conclusion**

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Constantine Hannaher whose telephone number is (703) 308-4850. The examiner can normally be reached on Monday-Friday with flexible hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David P. Porta can be reached on (703) 308-4852. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9318.

Art Unit: 2878

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

ch

  
Constantine Hannaher  
Primary Examiner